

## Message Text

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ORIGIN COME-00

INFO OCT-01 ISO-00 DODE-00 EB-07 NRC-05 NSAE-00 USIA-06

TRSE-00 ERDA-05 CIAE-00 EUR-12 MC-02 ACDA-07 OES-06

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DRAFTED BY COM/OEA/RAGAREL, EPWALINSKY:BAW

APPROVED BY EB/EWT:SGOODMAN

RPE

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FM SECSTATE WASHDC

TO USMISSION OECD PARIS

C O N F I D E N T I A L STATE 237758

EXCON

E.O. 11652: XGDS-L

TAGS: ESTC, COCOM, BU

SUBJECT:EXPORT OF OSCILLOSCOPE TO BULGARIA - IL 1584

REFS: (A) COCOM DOC. (76)620; (B) COCOM DOC.(76)866

1) THE FOLLOWING IS IN RESPONSE TO DUTCH QUESTIONS REPORTED IN REF B.

2) THE MODEL 370/145 CENTRAL PROCESSING UNIT HAS TIMING PULSES OF TEN NANOSECONDS DURATION AND IT IS IMPERATIVE IN THE SERVICING PROCEDURE TO SET TIMINGS TO ONE NANOSECOND OR BETTER SINCE THE FLIP-FLOPS ARE CLOCKED ON THE RISING EDGE OF THE WAVEFORM.

3) IN THEIR ENDEAVORS TO ANSWER THE DUTCH QUESTION, US TECHNICAL EXPERTS VIEWED PHOTOGRAPHS OF OSCILLOSCOPE TRACES OF THE CLOCKING CIRCUITRY OF THE 370/145 CPU, AND  
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THESE CLEARLY SHOW UP TO A FOUR NANOSECOND ERROR INTRO-

DUCED IN MAKING SUCH MEASUREMENTS WITH A MODEL 453 (75 MHZ) OSCILLOSCOPE VERSUS THE MODEL 454 (150 MHZ). TESTS FURTHER DISCLOSED THAT THE MODEL 454 OSCILLOSCOPE (150 MHZ) IS JUST BARELY ACCEPTABLE FOR SUCH TIMING PROCEDURES, ALTHOUGH SCOPES WITH EVEN A HIGHER BANDWIDTH PRODUCE BETTER RESULTS. SINCE THE 150 MHZ SCOPE IS NO LONGER

MANUFACTURED IN THE UNITED STATES, (AS STATED IN COCOM DOC(76) 813), THE 200 MHZ (MODEL 475) INSTRUMENT IS THE LOWEST BANDWIDTH AVAILABLE WHICH CAN ADEQUATELY SERVICE THE COMPUTER. -

4) MANY COMPUTERS DO NOT REQUIRE A 150-200 MHZ OSCILLOSCOPE FOR SERVICING. THIS IS THE CASE WITH THE MILITARY COMPUTERS REFERRED TO BY THE NETHERLANDS DELEGATION (SEE COCOM DOC.(76)866). SUCH COMPUTERS DO NOT REQUIRE CLOCK TIMING MEASUREMENTS IN THE ONE NANOSECOND REGION AND THUS CAN BE SERVICED UTILIZING A LESSER BANDWIDTH INSTRUMENT (100 MHZ). -

5) UNITED STATES AUTHORITIES APPRECIATE THE CONCERN EXPRESSED BY THE NETHERLAND DELEGATION REGARDING POSSIBLE DIVERSION OF PORTABLE OSCILLOSCOPES. THEY AGREE THAT DIVERSION IS, INDEED, EASIER WITH A SMALLER INSTRUMENT; HOWEVER, SUCH PORTABLE OSCILLOSCOPES ARE COMPLETELY SELF-CONTAINED UNITS. THE CRT, AND AMPLIFIERS ARE HOUSED IN A SINGLE BOX. NO VERSATILITY IS ACHIEVABLE AS IS THE CASE WITH A MAINFRAME AND PLUG-IN AMPLIFIERS. THE LATTER SCOPES ARE CONSIDERED MORE VALUABLE IN A "LABORATORY" TYPE ENVIRONMENT, WHEREAS THE PORTABLE UNITS ARE MORE APPROPRIATE FOR "FIELD" TYPE ENVIRONMENTS. BOTH TYPES ARE CONSIDERED IMPORTANT FROM A STRATEGIC STANDPOINT AND IT IS DIFFICULT TO JUDGE WHETHER THE IMPORTANCE OF ONE TYPE OUTWEIGHS THAT OF THE OTHER. AS STATED IN COCOM DOC (76)813, THE END-USER HAS PROVIDED WRITTEN GUARANTEE THAT THE 475 OSCILLOSCOPE WILL ONLY BE USED TO SERVICE AND MAINTAIN THE 370/145 COMPUTER SYSTEM AND THAT IT MUST BE KEPT IN CLOSE PROXIMITY TO THE COMPUTER IN THE EVENT OF A SYSTEM MALFUNCTION.

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FYI-- THE ABOVE FINDINGS ARE THE RESULT OF AN IN-DEPTH STUDY WHICH WAS UNDERTAKEN BY U.S. TECHNICAL EXPERTS IN CONJUNCTION WITH TECHNICIANS FROM INDUSTRY AND THE NATIONAL BUREAU OF STANDARDS. END FYI KISSINGER

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## Message Attributes

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**To:** OECD PARIS  
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